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SECTION 15420 - PLUMBING EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
  - 1. Water heaters.

1.3 REFERENCES

- A. ANSI/ASME Section 8D - Pressure Vessels.
- B. ANSI/NFPA 70 - National Electric Code.
- C. UL 174 - Household Electric Storage Tank Water Heaters.

1.4 QUALITY ASSURANCE

- A. Provide tanks with manufacturer's name, model number, and rating/capacity identified.
- B. Ensure products and installation of specified products are in conformance with recommendations and requirements of the following organizations:
  - 1. National Sanitation Foundation (NSF).
  - 2. American Society of Mechanical Engineers (ASME).
  - 3. National Electrical Manufacturers' Association (NEMA).
  - 4. Underwriters Laboratories (UL).
  - 5. American Gas Association (AGA)
- C. Ensure pumps operate at specified system capacities and are non-overloading in parallel or individual operation, operate within 15 percent of higher load and 35 percent lower than the midpoint of published maximum efficiency curve.

1.4 REGULATORY REQUIREMENTS

- A. Conform to NSF, Underwriters Laboratories, ANSI/ NFPA 70 and UL 174 requirements for water heaters.
- B. Conform to ANSI/ASME Section 8D for tanks.

## 1.5 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01340.
- B. Include dimensions drawings of water heaters indicating components and connections to other equipment and piping.
- C. Include heat exchanger dimensions, size of tapping, and performance data.
- D. Include dimensions of tanks, tank lining methods, anchors, attachments, lifting points, tapping, and drains.
- E. Submit manufacturer's installation instructions under provisions of Section 01340.
- F. Submit manufacturer's certificate under provisions of Section 01400 that pressure vessels meet or exceed specified requirements.
- G. Submit the following on the electric self-regulating heating cable.
  - 1. Copy of UL file indicating the heating cable is specifically listed to provide supplementary heating to hot water service supply systems utilizing thermally insulated metal or plastic pipe.
  - 2. Manufacturer's catalog cuts showing materials and performance data.

## 1.6 WARRANTY

- A. Provide three-year manufacturer's non-prorated warranty under provisions of Section 01700.
- B. Warranty: Include coverage of domestic water heater.

## PART 2 - PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURERS

- A. Hot Water Storage Tanks: State Lochinvar, Patterson-Kelley, A.O. Smith, or approved equivalent.
- B. Items of the same function and performance are acceptable if submitted and approved in conformance with Section 01600.

### 2.2 COMMERCIAL GAS-FIRED WATER HEATER

- A. Gas water heaters shall be a packaged unit with a 100-gallon storage capacity, an input of 260,000 Btu/hour LP gas, and a recovery of 319 gallons per hour at a 100-degree Fahrenheit temperature rise. Units shall have a porcelainized glass-lined tank. Tank shall be additionally protected against premature failure in the following ways:

1. A 3-year limited warranty against failure due to corrosion, metal fatigue or overheating caused by build-up of scale, film or sediment.
  2. Against electrolytic corrosion by multiple, factory-installed magnesium anode rods.
- B. Water heaters shall have the CSA International seal of certification, a working pressure rating of 150 psi, a factory-installed A.S.M.E. rated temperature and pressure relief valve. Water heater to be equal to State Model SBF-100 260 NES.

### **PART 3 - EXECUTION**

#### **3.1 WATER HEATER INSTALLATION**

- A. Install water heaters in accordance with manufacturer's instructions and to NSF, NFPA, and UL requirements.
- B. Coordinate with plumbing piping and electrical work to achieve operating system.

**END OF SECTION 15420**